

REMARKS

Claims 1-15 are pending in the application. The amendments to claims 1, 8, and 15 are grammatical only in nature, and do not affect the scope of those claims.

Applicants submitted an Information Disclosure Statement (PTO-1449) in the instant application at the time of filing. However, a copy of the form, as considered by the Examiner, was not present in the Office Action. Applicants respectfully request that a copy of the submitted list, as reviewed and initialed by the Examiner, be returned to the Applicants with the next communication.

Claims 1, 3, 6, and 3-15 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,894,572, to Moore, Jr., hereinafter "Moore." Claims 1 and 15 are independent.

Claim 1 recites a process for the production of a shell mould. The process comprises the steps of dipping a preformed expendable pattern into a slurry of refractory particles and colloidal liquid binder whereby to form a coating layer on the pattern, depositing particles of refractory material onto the coating, and drying. The particles of refractory material are pre-mixed with a gel-forming material to coat at least a portion of the refractory materials with the gel-forming material. Moisture is absorbed by the gel-forming material, which causes gellation of the colloidal binder, which reduces the time required for drying.

Moore discloses a process for forming a refractory laminate on the surface of a support structure. The process comprises the steps of dipping the structure into a bath of positively charged colloidal particles to form a coating on the surface, and applying the surface to a particulate refractory material containing a chemical setting agent. (Abstract) The coating containing the positively charged colloidal particles is "stuccoed" by interaction with the refractory material containing the setting agent. (col. 3, l. 19-22)

Applicants respectfully submit that Moore does not disclose all of the features of claim 1. The Office Action has failed to indicate where a gel-forming material absorbs moisture after contact with a coating layer, causing gellation of a colloidal binder, as is required in claim 1. This feature is indeed completely absent from Moore. The two passages cited by the Office Action indicate processes that show gellation by chemical interaction between binders and a gelling agent, not gellation that is caused by absorption of moisture by a gel-forming material, as required in claim 1. Col. 2, l. 29-37 of Moore, cited by the Office Action, discloses this chemical interaction between sodium silicate as a binder, and mono-ammonium phosphate and magnesium oxide "in the stucco as a gelling agent." Similarly, col. 11, l. 45 – col. 12, l. 12 of Moore, also cited by the Office Action, also discloses chemical interactions that produce gelling. Moore very clearly states, in fact, that the setting agent must be "chemically active." (col. 11, l. 60) Neither of these two passages discloses or suggests a gel-forming material that absorbs moisture to cause gellation of a colloidal binder, as required by the process of claim 1.

Claim 1 is therefore patentable over Moore under 35 U.S.C. §102(b). Claims 3, 6, 13, and 14 all depend from claim 1, and are also patentable over Moore for at least the reasons provided above with respect to claim 1.

Claim 15 recites, *inter alia*, a gel-forming material that absorbs moisture to cause gellation of a colloidal binder. As stated above with respect to claim 1, Moore fails to disclose or suggest such a feature. Claim 15 is therefore also patentable over Moore under 35 U.S.C. §102(b).

For the reasons discussed above, the rejection of claims 1, 3, 6, and 13-15 under 35 U.S.C. §102(b) as being anticipated by Moore has been overcome. Applicants respectfully request that it be reconsidered and withdrawn.

Claims 1, 3, and 13-15 have been rejected under 35 U.S.C. §102(b) as being anticipated by GB 1,181,164, to Haywood et al., hereinafter "Haywood." Claims 1 and

15 are independent, and are described above.

Haywood is directed to a method of making investment casting molds. The process involves feeding particulate stuccos into a high-volume, low-pressure air stream, injecting a liquid capable of gelling the stuccos, and directing the produced mixture onto wax molds. (p. 1, l. 54-64).

As discussed above, claim 1 recites dipping a preformed expendable pattern into a slurry of refractory particles and colloidal liquid binder. Haywood fails to disclose or suggest dipping, as required by claim 1, and in fact specifically states that it avoids the process of dipping a pattern into a slurry. Haywood clearly states that "there are no slurries" in its casting process, and lists several reasons why it wishes to avoid dipping processes. (p. 2, l. 66-72) The refractory material and the gelling agent are air-blown onto the pattern (p. 1, l. 57-58), which is inapposite to the requirement of claim 1 that a preformed expendable pattern is dipped into a slurry.

Furthermore, as discussed above with respect to Moore, claim 1 recites a gel-forming material that absorbs moisture to cause gellation of the colloidal binder. In contrast, in Haywood, the spraying of aluminum hydroxychloride onto the gelling agent powder is what causes gellation. Gellation in Haywood is therefore caused by a chemical reaction, not by the absorption of moisture by a gel-forming material, as required in claim 1.

Claim 1 is therefore patentable over Haywood under 35 U.S.C. §102(b). Claims 3 and 3-15 depend from claim 1, and for at least the reasons provided above in support of claim 1, are also patentable over Haywood.

Claim 15 recites, *inter alia*, dipping a preformed expendable pattern into a slurry of refractory particles, and a gel-forming material that absorbs moisture to cause gellation of a colloidal binder. As discussed above with respect to claim 1, both of these features are absent from Haywood. Claim 15 is therefore patentable over Haywood.

For the reasons discussed above, the rejection of claims 1, 3, and 13-15 under 35 U.S.C. §102(b) as being anticipated by Haywood has been overcome. Applicants respectfully request that it be reconsidered and withdrawn.

Claims 2, 4, 5, and 7-12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Moore or Haywood. These claims all depend from claim 1.

As discussed above, Moore and Haywood fail to disclose or suggest the features of claim 1. Both references fail to disclose or suggest a gel-forming material that absorbs moisture to cause gellation of a colloidal binder. Haywood also fails to disclose or suggest dipping a preformed expendable pattern into a slurry.

Therefore, for at least the reasons provided above in support of the patentability of claim 1, claims 2, 4, 5, and 7-12 are also patentable over Moore and Haywood. Applicants respectfully request that this rejection be reconsidered and withdrawn.

Claims 1-15 have been provisionally rejected under co-pending United States Application No. 10/523,855, in view of either Moore or Haywood. The Office Action acknowledges that the step of pre-mixing with a gel-forming material found in the present application is missing in the '855 Application, and states that Moore and Haywood show this feature to be "conventional." As discussed above, however, Moore and Haywood both fail to disclose or suggest the claimed processes. Therefore, Applicants respectfully submit that this rejection has been overcome, and request that it be withdrawn.

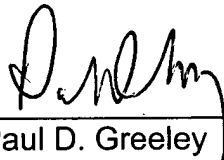
An indication of the allowability of all pending claims by issuance of a Notice of Allowance is earnestly solicited.

If for any reason the Examiner feels that consultation with Applicants'/ Applicant's attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below.

Respectfully submitted,

Date: _____

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